

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 40. (Canceled)

41. (New) A computer readable medium containing executable code comprising:
code that develops a container fingerprint derived from gamma rays detected about a container;

code that compares said container fingerprint to a predetermined fingerprint corresponding to a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match; and

code that indicates, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

42. (New) A computer readable medium as set forth in Claim 41 wherein said code that develops includes:

code that reads raw data obtained from said gamma rays; and

code that subtracts predetermined background data from said raw data to develop said container fingerprint.

43. (New) A computer readable medium as set forth in Claim 42 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

44. (New) A computer readable medium as set forth in Claim 43 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

45. (New) A computer readable medium as set forth in Claim 43 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

46. (New) A computer readable medium as set forth in Claim 41 wherein said code that compares further compares said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

47. (New) A computer readable medium as set forth in Claim 41 wherein said code that compares further includes code that consults a database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

48. (New) A computer readable medium as set forth in Claim 41 wherein said code that compares further includes code that compares, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said code that indicates further indicates, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

49. (New) A computer readable medium as set forth in Claim 48 wherein said code that compares said container fingerprint to said purported fingerprint further compares said

container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said code that indicates further indicates that, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

50. (New) A computer readable medium as set forth in Claim 48 wherein said code that compares said container fingerprint to said purported fingerprint further includes code that consults a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

51. (New) A computer readable medium as set forth in Claim 41 wherein said code that compares further compares, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and wherein said code that indicates further indicates, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

52. (New) A computer readable medium as set forth in Claim 51 wherein said code that compares said container fingerprint to said background fingerprint further includes code that consults a database containing said background fingerprint.

53. (New) A computer readable medium as set forth in Claim 41 wherein said code that compares further compares, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said code that indicates further indicates, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

54. (New) A computer readable medium as set forth in Claim 53 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

55. (New) A computer readable medium as set forth in Claim 53 wherein said code that indicates further indicates, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

56. (New) A computer readable medium as set forth in Claim 53 wherein said code that compares said container fingerprint to each of said plurality of purported fingerprints further includes code that consults a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

57. (New) A computer readable medium as set forth in Claim 41 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

58. (New) A computer readable medium containing executable code comprising:

code that develops a container fingerprint derived from gamma rays detected about a container;

code that compares said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match; and

code that indicates, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

59. (New) A computer readable medium as set forth in Claim 58 wherein said code that develops includes:

code that reads raw data obtained from said gamma rays; and

code that subtracts predetermined background data from said raw data to develop said container fingerprint.

60. (New) A computer readable medium as set forth in Claim 59 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

61. (New) A computer readable medium as set forth in Claim 60 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

62. (New) A computer readable medium as set forth in Claim 60 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

63. (New) A computer readable medium as set forth in Claim 58 wherein said code that compares further compares said container fingerprint to a composite purported fingerprint

derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said code that indicates further indicates that, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

64. (New) A computer readable medium as set forth in Claim 58 wherein said code that compares further includes code that consults a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

65. (New) A computer readable medium as set forth in Claim 58 wherein said code that compares further compares, in the event said container fingerprint and said purported fingerprint fail to match heuristically, to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and wherein said code that indicates further indicates, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

66. (New) A computer readable medium as set forth in Claim 65 wherein said code that compares said container fingerprint to said background fingerprint further includes code that consults a database containing said background fingerprint.

67. (New) A computer readable medium as set forth in Claim 58 wherein said code that compares further includes code that compares, in the event said container fingerprint and said purported fingerprint fail to match heuristically, said container fingerprint to each of a

plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said code that indicates further indicates, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

68. (New) A computer readable medium as set forth in Claim 67 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

69. (New) A computer readable medium as set forth in Claim 67 wherein said code that indicates further indicates, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

70. (New) A computer readable medium as set forth in Claim 67 wherein said code that compares said container fingerprint to each of said plurality of purported fingerprints further includes code that consults a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

71. (New) A computer readable medium as set forth in claim 58 wherein said code that compares further compares, in the event said container fingerprint and said purported fingerprint fail to match heuristically, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said code that indicates further indicates, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains a known radioactive or fissile material.

72. (New) A computer readable medium as set forth in Claim 71 wherein said code that compares said container fingerprint to said predetermined fingerprint further compares said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

73. (New) A computer readable medium as set forth in Claim 71 wherein said code that compares said container fingerprint to said predetermined fingerprint further includes code that consults a database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

74. (New) A computer readable medium as set forth in Claim 71 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

75. (New) A computer readable medium containing executable code comprising:
code that develops a container fingerprint derived from gamma rays detected about a container;
code that compares said container fingerprint to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint; and
code that indicates, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

76. (New) A computer readable medium as set forth in Claim 75 wherein said code that develops includes:
code that reads raw data obtained from said gamma rays; and
code that subtracts predetermined background data from said raw data to develop said container fingerprint.

77. (New) A computer readable medium as set forth in Claim 76 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

78. (New) A computer readable medium as set forth in Claim 77 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

79. (New) A computer readable medium as set forth in Claim 77 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

80. (New) A computer readable medium as set forth in Claim 75 wherein said code that compares further includes code that consults a database containing said background fingerprint.

81. (New) A computer readable medium as set forth in Claim 75 wherein said code that compares further compares, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said code that indicates further indicates, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

82. (New) A computer readable medium as set forth in Claim 81 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in

variance to any such standardized commodity ID listed on a manifest associated with said container.

83. (New) A computer readable medium as set forth in Claim 81 wherein said code that indicates further indicates, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

84. (New) A computer readable medium as set forth in Claim 81 wherein said code that compares said container fingerprint to each of said plurality of purported fingerprints further includes code that consults a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

85. (New) A computer readable medium as set forth in claim 75 wherein said code that compares further compares, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said code that indicates further indicates, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

86. (New) A computer readable medium as set forth in Claim 85 wherein said code that compares said container fingerprint to said predetermined fingerprint further compares said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

87. (New) A computer readable medium as set forth in Claim 85 wherein said code that compares said container fingerprint to said predetermined fingerprint further includes code

that consults a database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

88. (New) A computer readable medium as set forth in Claim 75 wherein said code that compares further includes code that compares, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said code that indicates further indicates, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

89. (New) A computer readable medium as set forth in Claim 88 wherein said code that compares said container fingerprint to said purported fingerprint further compares said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said code that indicates further indicates that, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

90. (New) A computer readable medium as set forth in Claim 88 wherein said code that compares said container fingerprint to said purported fingerprint further includes code that consults a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

91. (New) A computer readable medium as set forth in Claim 75 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

92. (New) A method comprising the steps of:
developing a container fingerprint derived from gamma rays detected about a container;
comparing said container fingerprint to a predetermined fingerprint corresponding to a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match; and
indicating, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

93. (New) A method as set forth in Claim 92 wherein said developing step includes the steps of:
reading raw data obtained from said gamma rays; and
subtracting predetermined background data from said raw data to develop said container fingerprint.

94. (New) A method as set forth in Claim 93 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

95. (New) A method as set forth in Claim 94 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

96. (New) A method as set forth in Claim 94 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

97. (New) A method as set forth in Claim 92 wherein said comparing step further includes the step of comparing said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

98. (New) A method as set forth in Claim 92 wherein said comparing step further includes the step of consulting a database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

99. (New) A method as set forth in Claim 92 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

100. (New) A method as set forth in Claim 99 wherein said comparing said container fingerprint to said purported fingerprint step further includes the step of comparing said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

101. (New) A method as set forth in Claim 99 wherein said comparing said container fingerprint to said purported fingerprint step further includes the step of consulting a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

102. (New) A method as set forth in Claim 92 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

103. (New) A method as set forth in Claim 102 wherein said comparing said container fingerprint to said background fingerprint step further includes the step of consulting a database containing said background fingerprint.

104. (New) A method as set forth in Claim 92 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

105. (New) A method as set forth in Claim 104 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

106. (New) A method as set forth in Claim 104 wherein said indicating step further includes the step of indicating, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

107. (New) A method as set forth in Claim 104 wherein said comparing said container fingerprint to each of said plurality of purported fingerprints step further includes the step of consulting a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

108. (New) A method as set forth in Claim 92 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

109. (New) A method comprising the steps of:
developing a container fingerprint derived from gamma rays detected about a container;
comparing said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match; and
indicating, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

110. (New) A method as set forth in Claim 109 wherein said developing step includes the steps of:

reading raw data obtained from said gamma rays; and
subtracting predetermined background data from said raw data to develop said container fingerprint.

111. (New) A method as set forth in Claim 110 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

112. (New) A method as set forth in Claim 111 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

113. (New) A method as set forth in Claim 111 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

114. (New) A method as set forth in Claim 109 wherein said comparing step further includes the step of comparing said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said indicating step further includes the step of indicating that, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

115. (New) A method as set forth in Claim 109 wherein said comparing step further includes the step of consulting a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of

standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

116. (New) A method as set forth in Claim 109 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said purported fingerprint fail to match heuristically, to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

117. (New) A method as set forth in Claim 116 wherein said comparing said container fingerprint to said background fingerprint step further includes the step of consulting a database containing said background fingerprint.

118. (New) A method as set forth in Claim 109 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said purported fingerprint fail to match heuristically, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

119. (New) A method as set forth in Claim 118 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

120. (New) A method as set forth in Claim 118 wherein said indicating step further includes the step of indicating, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

121. (New) A method as set forth in Claim 118 wherein said comparing said container fingerprint to each of said plurality of purported fingerprints step further includes the step of consulting a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

122. (New) A method as set forth in claim 109 wherein said comparing step further includes the step of comparing, in the event said container fingerprint and said purported fingerprint fail to match heuristically, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains a known radioactive or fissile material.

123. (New) A method as set forth in Claim 122 wherein said comparing said container fingerprint to said predetermined fingerprint step further includes the step of comparing said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

124. (New) A method as set forth in Claim 122 wherein said comparing said container fingerprint to said predetermined fingerprint step further includes the step of consulting a

database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

125. (New) A method as set forth in Claim 122 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

126. (New) A method comprising the steps of:
developing a container fingerprint derived from gamma rays detected about a container;
comparing said container fingerprint to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint; and
indicating, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

127. (New) A method as set forth in Claim 126 wherein said developing step includes the steps of:
reading raw data obtained from said gamma rays; and
subtracting predetermined background data from said raw data to develop said container fingerprint.

128. (New) A method as set forth in Claim 127 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

129. (New) A method as set forth in Claim 128 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

130. (New) A method as set forth in Claim 128 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

131. (New) A method as set forth in Claim 126 wherein said comparing step further includes the step of consulting a database containing said background fingerprint.

132. (New) A method as set forth in Claim 126 wherein said comparing step further includes the step of comparing, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

133. (New) A method as set forth in Claim 132 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

134. (New) A method as set forth in Claim 132 wherein said indicating step further includes the step of indicating, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

135. (New) A method as set forth in Claim 132 wherein said comparing said container fingerprint to each of said plurality of purported fingerprints step further includes the step of consulting a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's.

136. (New) A method as set forth in claim 126 wherein said comparing step further includes the step of comparing, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

137. (New) A method as set forth in Claim 136 wherein said comparing said container fingerprint to said predetermined fingerprint step further includes the step of comparing said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

138. (New) A method as set forth in Claim 136 wherein said comparing said container fingerprint to said predetermined fingerprint step further includes the step of consulting a database containing a plurality of predetermined fingerprints, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

139. (New) A method as set forth in Claim 126 wherein said comparing step further includes the step of comparing, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

140. (New) A method as set forth in Claim 139 wherein said comparing said container fingerprint to said purported fingerprint step further includes the step of comparing said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said indicating step further includes the step of indicating, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

141. (New) A method as set forth in Claim 139 wherein said comparing said container fingerprint to said purported fingerprint further includes the step of consulting a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

142. (New) A method as set forth in Claim 126 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

143. (New) An apparatus comprising:
a container fingerprint derived from gamma rays detected about a container; and
a computer operative to compare said container fingerprint to a predetermined fingerprint corresponding to a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match; and further operative to indicate, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

144. (New) An apparatus as set forth in Claim 143 wherein said computer is further operative to read raw data obtained from detecting said gamma rays, and further operative to subtract predetermined background data from said raw data to develop said container fingerprint.

145. (New) An apparatus as set forth in Claim 144 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

146. (New) An apparatus as set forth in Claim 145 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

147. (New) An apparatus as set forth in Claim 145 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

148. (New) An apparatus as set forth in Claim 143 wherein said computer is further operative to compare said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

149. (New) An apparatus as set forth in Claim 143 further comprising a database containing a plurality of predetermined fingerprints, said computer when operative to compare said container fingerprint to said predetermined fingerprint being further operative to consult said database, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

150. (New) An apparatus as set forth in Claim 143 wherein said computer is further operative to compare, in the event said container fingerprint and said predetermined fingerprint

fail to match heuristically, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

151. (New) An apparatus as set forth in Claim 150 wherein said computer when operative to compare said container fingerprint to said purported fingerprint is further operative to compare said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said computer is further operative to indicate that, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

152. (New) An apparatus as set forth in Claim 150 further comprising a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said computer when operative to compare said container fingerprint to said purported fingerprint is further operative to consult said database, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

153. (New) An apparatus as set forth in Claim 143 wherein said computer is further operative to compare, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to a background fingerprint to determine

whether said container fingerprint is substantially lower than said background fingerprint, and wherein said computer is further operative to indicate, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

154. (New) An apparatus as set forth in Claim 153 further comprising a database containing said background fingerprint, said computer when operative to compare said container fingerprint to said background fingerprint being further operative to consult said database.

155. (New) An apparatus as set forth in Claim 143 wherein said computer is further operative to compare, in the event said container fingerprint and said predetermined fingerprint fail to match heuristically, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said computer is further operative to indicate, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

156. (New) An apparatus as set forth in Claim 155 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

157. (New) An apparatus as set forth in Claim 155 wherein said computer is further operative to indicate, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

158. (New) An apparatus as set forth in Claim 155 further comprising a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints

being stored in association with said respective one of said plurality of standardized commodity ID's, wherein said computer when operative to compare said container fingerprint to each of said plurality of purported fingerprints being further operative to consult said database.

159. (New) An apparatus as set forth in Claim 143 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

160. (New) An apparatus comprising:
a container fingerprint derived from gamma rays detected about a container;
a computer operative to compare said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and further operative to indicate, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

161. (New) An apparatus as set forth in Claim 160 wherein said computer is further operative to read raw data obtained from said gamma rays and further operative to subtract predetermined background data from said raw data to develop said container fingerprint.

162. (New) An apparatus as set forth in Claim 161 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

163. (New) An apparatus as set forth in Claim 162 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

164. (New) An apparatus as set forth in Claim 162 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

165. (New) An apparatus as set forth in Claim 160 wherein said computer is further operative to compare said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

166. (New) An apparatus as set forth in Claim 160 further comprising a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said computer when operative to compare said container fingerprint to said purported fingerprint is further operative to consult said database, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

167. (New) An apparatus as set forth in Claim 160 wherein said computer is further operative to compare, in the event said container fingerprint and said purported fingerprint fail to match heuristically, to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and wherein said computer is further operative to indicate, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

168. (New) An apparatus as set forth in Claim 167 further comprising a database containing said background fingerprint, said computer when operative to compare said container fingerprint to said background fingerprint being further operative to consult said database.

169. (New) An apparatus as set forth in Claim 160 wherein said computer is further operative to compare, in the event said container fingerprint and said purported fingerprint fail to match heuristically, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said computer is further operative to indicate, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

170. (New) An apparatus as set forth in Claim 169 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

171. (New) An apparatus as set forth in Claim 169 wherein said computer is further operative to indicate, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

172. (New) An apparatus as set forth in Claim 169 further comprising a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's, wherein said computer when operative to compare said container fingerprint to each of said plurality of purported fingerprints being further operative to consult said database.

173. (New) An apparatus as set forth in claim 160 wherein said computer is further operative to compare, in the event said container fingerprint and said purported fingerprint fail to

match heuristically, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains a known radioactive or fissile material.

174. (New) An apparatus as set forth in Claim 173 wherein said computer when operative to compare said container fingerprint to said predetermined fingerprint is further operative to compare said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

175. (New) An apparatus as set forth in Claim 173 further comprising a database containing a plurality of predetermined fingerprints, said computer when operative to compare said container fingerprint to said predetermined fingerprint being further operative to consult said database, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

176. (New) An apparatus as set forth in Claim 173 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.

177. (New) An apparatus comprising:
a container fingerprint derived from gamma rays detected about a container;
a computer operative to compare said container fingerprint to a background fingerprint to determine whether said container fingerprint is substantially lower than said background fingerprint, and further operative to indicate, in the event said container fingerprint is substantially lower than said background fingerprint, that said container contains radiation shielding material.

178. (New) An apparatus as set forth in Claim 177 wherein said computer is operative to read raw data obtained from said gamma rays. and further operative to subtract predetermined background data from said raw data to develop said container fingerprint.

179. (New) An apparatus as set forth in Claim 178 wherein said raw data and said predetermined background data are raw digitized data and predetermined digitized background data, respectively.

180. (New) An apparatus as set forth in Claim 179 wherein said predetermined digitized background data is a background fingerprint and said raw digitized data is an unnormalized container fingerprint.

181. (New) An apparatus as set forth in Claim 179 wherein said raw digital data and said predetermined digital background data are each a selected one of intensity data and energy spectrum data.

182. (New) An apparatus as set forth in Claim 177 further comprising a database containing said background fingerprint, said computer when operative to compare said container fingerprint to said background fingerprint being further operative to consult said database.

183. (New) An apparatus as set forth in Claim 177 wherein said computer is further operative to compare, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to each of a plurality of purported fingerprints to determine whether said container fingerprint and at least one of said purported fingerprints heuristically match, each of said purported fingerprints being associated with a respective one of a plurality of standardized commodity ID's, and wherein said computer is further operative to indicate, in the event said container fingerprint and said at least one of said purported fingerprints heuristically match, that said container contains contents identified by said respective one of said standardized commodity ID's associated with said at least one of said purported fingerprints.

184. (New) An apparatus as set forth in Claim 183 wherein said respective one of said standardized commodity ID's that identifies contents of said container is in variance to any such standardized commodity ID listed on a manifest associated with said container.

185. (New) An apparatus as set forth in Claim 183 wherein said computer is further operative to indicate, in the event said container fingerprint and each of said purported fingerprints fail to match, that contents of said container is unknown.

186. (New) An apparatus as set forth in Claim 183 further comprising a database containing said plurality of purported fingerprints, each of said plurality of purported fingerprints being stored in association with said respective one of said plurality of standardized commodity ID's, wherein said computer when operative to compare said container fingerprint to each of said plurality of purported fingerprints being further operative to consult said database.

187. (New) An apparatus as set forth in claim 177 wherein said computer is further operative to compare, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a predetermined fingerprint of a known sample of radioactive or fissile material to determine whether said container fingerprint and said predetermined fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said predetermined fingerprint heuristically match, that said container contains said known radioactive or fissile material.

188. (New) An apparatus as set forth in Claim 187 wherein said computer when operative to compare said container fingerprint to said predetermined fingerprint is further operative to compare said container fingerprint to each of a plurality of predetermined fingerprints, each of said predetermined fingerprints corresponding to a respective one of known samples of radioactive or fissile material, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

189. (New) An apparatus as set forth in Claim 187 further comprising a database containing a plurality of predetermined fingerprints, said computer when operative to compare said container fingerprint to said predetermined fingerprint being further operative to consult said database, said predetermined fingerprint being one of said plurality of predetermined fingerprints.

190. (New) An apparatus as set forth in Claim 177 wherein said computer is further operative to compare, in the event said container fingerprint is not substantially lower than said background fingerprint, said container fingerprint to a purported fingerprint identified from being associated with a standardized commodity ID known from a manifest associated with said container to determine whether said container fingerprint and said purported fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said purported fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID.

191. (New) An apparatus as set forth in Claim 190 wherein said computer when operative to compare said container fingerprint to said purported fingerprint is further operative to compare said container fingerprint to a composite purported fingerprint derived from a plurality of selected purported fingerprints identified from being associated with a respective one of a plurality of standardized commodity ID's known from said manifest to determine whether said container fingerprint and said composite fingerprint heuristically match, and wherein said computer is further operative to indicate, in the event said container fingerprint and said composite fingerprint heuristically match, that said container contains contents identified by said standardized commodity ID's, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

192. (New) An apparatus as set forth in Claim 190 further comprising a database containing a plurality of purported fingerprints, each of said purported fingerprints being stored in association with a respective one of a plurality of standardized commodity ID's, said computer

when operative to compare said container fingerprint to said purported fingerprint is further operative to consult said database, said purported fingerprint being one of said plurality of purported fingerprints and said standardized commodity ID being one of said plurality of standardized commodity ID's.

193. (New) An apparatus as set forth in Claim 177 wherein said gamma rays normally exist about said container in the absence of absorption of thermal neutrons.